The SKIMMER

News of the Delaware National Estuarine Research Reserve

Volume VII, No. II
Summer 2002

The Delaware National Estuarine Research Reserve (DNERR) is one of 25 designated reserves across the country.

The program is a federal-state partnership whose goal is to establish, protect and manage natural estuarine habitats for research and education.

Delaware's Reserve consists of two components, the St. Jones River and Blackbird Creek. These sites include both brackish and fresh water estuaries and represent the diverse estuarine ecosystems found throughout the Mid-Atlantic.

Inside

Message from the Reserve Manager

I would like to take this opportunity to thank all the volunteers who help the Reserve accomplish its mission.

Over the last two years it has been a privilege to work with dedicated people who care about protecting our environment. Volunteers have performed a variety of duties at the Reserve.

We have received help maintaining and improving the landscaping from the Boy Scouts of America. Friends of the DNERR have adopted Union Church Road on which our Blackbird Property is located. Many people come out in the dead of night to perform the Horseshoe Crab survey. Without their help a large portion of our research would not be possible.

Most recently 24 students from Smyrna High School Agriculture Program came out and replaced 1/8 of a mile of handrail on our boardwalk. They accomplished in one day what would have been a long cumbersome process for our facilities staff.

Finally, there is another small, dedicated group that has been vital to our volunteer activities that should be recognized. Katy Dulin, Education Coordinator, Kate Marvel, Estuarine Educator and Wes Conley, Conservationist have tirelessly worked at developing the program and provided meaningful activities for our volunteers. These are the folks who work behind the scenes to make our programs run smoothly.

To all of our volunteers and staff, thank you. They are shaping the future of the Reserve. If you or a group you represent would like to know more about volunteer opportunities at the Reserve give us a call.

Mark Del Vecchio

Meet the Reserves

The 16th National Estuarine Research Reserve, established in February of 1986 and managed at the state level by the Alabama Department of Conservation and Natural Resources, is Weeks Bay NERR. Located off of Mobile Bay, just south of Mobile Alabama, Weeks Bay is a small estuarine embayment, consisting of approximately 3 square miles of open shallow water fringed by salt marshes and swamps. The Reserve includes an Interpretive Center housing offices, a laboratory, a conference room, a small classroom, lobby/exhibit area; a 2,500 ft. handicapped accessible boardwalk with observation deck overlooking the Bay and a raised catwalk over a wetlands habitat; three boats (aluminum skiff, 16 ft. fiberglass work boat, and a 32 ft. pontoon tour boat); and a quality specimen collection of regional flora and fauna.

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Summer 2002 Programs at the Reserve

Afternoon Canoe
July 24

History Hike
August 14

Preschool Naturalist
June 20

St. Jones River Boat Trips
June 15, August 22

Seine the Bay
August 21

Summer Day Camps
July 10, ages 10-14
July 11, ages 5-9

For more information and registration call
(302) 739-3436

Staff Directory

RESERVE MANAGER:
Mark DelVecchio
RESEARCH COORDINATOR:
Bob Scarborough
EDUCATION COORDINATOR:
Katy Dulin
CONSERVATIONIST:
Wes Conley
ESTUARINE EDUCATOR:
Kate Marvel
RESEARCH TECHNICIAN:
Mike Mensinger
INTERN:
Heather Hudson

Meet the Reserves, con't

The Reserve is home to more than 180 species of fish such as such as the spotted sea trout, red drum, croaker, flounder, mullet and menhaden. The Reserve is also home for three endangered fish species. The Reserve serves as habitat for over 330 species of birds, including 100 resident species, 125 wintering species and 85 spring and fall migrants. This area is of special importance to the large number of Trans-Gulf migrants as a resting and feeding area. The Reserve is also home to more than 50 mammals, three of which are endangered (the Florida black bear, the marsh rabbit and the bayou gray squirrel). Other residents include over 70 species of reptiles (8 endangered) and 40 species of amphibians (2 endangered).

Weeks Bay Reserve Foundation (WBRF) is a not-for-profit membership organization incorporated in January 1990. Its goal is to support the Weeks Bay Reserve financially through membership fees and donations and actively through its members' participation in volunteer services and programs. For more information about the Reserve, check out the Foundation's website at http://www.weeksbay.org.

Many thanks to the staff of the Weeks Bay NERR for hosting the 2002 Education Coordinator's conference in February!

Katy Dulin

Friends of the Reserve

The Friends of the St. Jones Reserve hosted three events during March and April.

Jim Hewes of the Delaware Coastal Programs spoke to the Friends on March 21st about Migratory Shorebird Ecology and Research.

On April 6th, the Friends conducted their annual clean-up of a two-mile stretch along Union Church Road and the Blackbird Creek Component of the DNERR. Members collected numerous bags of trash, tires, bags of grass clippings, old roofing, and an inflatable boat. Delaware Department of Transportation provided the bags, safety vests, and signs for volunteers and members of the Adopt-A-Highway program, and picked up the trash after the collection. Many thanks to those who donated their time to the effort!

On April 18th, the Friends hosted a lecture by Dr. Richard Weber, an Associate Researcher with the Reserve, who spoke about Horseshoe Crab ecology and his associated research.

After the May picnic, the Friends will not reconvene until September. Have a great summer!

Katy Dulin

Above - a Sanderling is weighed, measured and banded as part of Delaware's shorebird monitoring project. Below - horseshoe crab eggs are the food source for many species of migratory shorebirds that stopover in the Delaware Bay.

Atmospheric Deposition Research Expands at the Reserve

Reserve's Research Technician, Mike Mensinger, gets the equipment ready for sampling

A new atmospheric deposition research project started at the Reserve in March. This is a cooperative project between the DNERR, University of Maryland, University of Delaware and the USDA. The two-year project is measuring the amount of numerous pesticides in the atmosphere that impact the estuary and the entire Delmarva Region. The redeposition from the atmosphere of pesticides lost from agricultural fields to surface waters and other natural areas is an area of concern as some pesticides are toxic to wildlife at extremely low levels.

The atmosphere is an important part of the hydrologic cycle that can transport pesticides from their point of application and deposit them in unintended areas. There is evidence that some long-lived pesticides used in one area of the country can migrate through the atmosphere and be deposited in other areas of the country. Pesticides can be released to the air from soil and plant material during and after application through a process called volatilization. Significant amounts of pesticides may also be lost to the atmosphere during application due to "sprayer drift" or very fine spray droplets that never reach the intended plant or soil surface. Average annual concentrations of pesticides in air and rain are generally very low, although elevated concentrations may occur during periods of high use, usually in the spring and summer months. The environmental effects of long-term occurrences of low levels of pesticides in the atmosphere are not yet well understood.

For this project two types of samplers have been installed at three sites on the Delmarva Peninsula. These sites include the DNERR at the St. Jones Reserve, the UD College of Marine Studies Campus at Lewes, and the University of Maryland Horn Point Environmental Laboratory at Cambridge Maryland. One sampler measures wet deposition by collecting rainfall and then pumping the water through filters that are then analyzed for the pesticides. The other sampler is activated once a week for 24 hours and draws air though two types of filters, which are subsequently analyzed for airborne pesticides. Scientists at the USDA Laboratory at Beltsville, Maryland will examine both the particle bound (rainfall filters) and gaseous (air filters) samples for over 18 different pesticides or pesticide by-products.

Results from the sampling will be used in models to determine both where the majority of the pesticides are originating from and to determine areas that will be most heavily impacted by the predominate agricultural sections of the region. This will help target locations for Best Management Practices (BMPs) to limit pesticide losses and identify areas that may need closer scrutiny to identify any effects from pesticides on the habitat.

Bob Scarborough

Volunteer Corner

On Thursday, April 18th, a training session was held for those individuals interested in assisting with the 2002 Horseshoe Crab Spawning Census. This year the Reserve is coordinating Kitts Hummock Beach, Ted Harvey Wildlife Area, and North Bowers Beach for the Baywide Survey in conjunction with the University of Delaware's Marine Advisory Service and Limuli Laboratories. The protocol is different than that which the Reserve followed last year.

We had plenty of volunteers sign up to assist us.

If you are still interested in coming out to observe the phenomenon, with the possibility of assisting, please call the Reserve.

Katy Dulin

es·tu·ar·y (ĕs'choo-ĕr'ē) n., pl. es·tu·ar·ies. 1. The part of the wide lower course of a river where its current is met by the tides. 2. An arm of the SEA that extends inland to meet the mouth of a river.

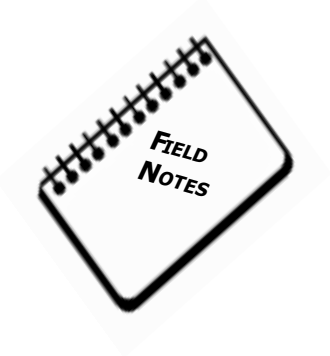
Flag Raising

Glen Knecht prepares to raise the United State flag

A donation was made to the Friends of the St. Jones Reserve this past winter in memory of Robert Knecht. The donation was used to install three flagpoles at the front of the St. Jones Reserve Center. On Monday, March 18, 2002, Mr. Knect's family joined DNERR staff for the first flag raising. Mr. Knect's wife, Biliana Cicin-Sain, raised the NOAA flag. Sarah Cooksey, Administrator of the Delaware Coastal Programs, raised the State of Delaware flag. Glen Knecht, brother of Robert, raised the United State flag. We thank the family for their continued support of the Reserve!

Katy Dulin

A Page from the Naturalist's Notebook



Taking a stroll along the St Jones Reserve boardwalk is an inviting escapade into the natural history of an estuary. From the marsh wrens and fiddler crabs, to the raccoon and deer tracks left in the marsh, you can see that life abounds here! But don't forget to take a look into the tidal creeks of the St Jones as well, where you are bound to see plenty of fish, including mud minnows or mummichogs (*Fundulus heteroclitus*).

Photo courtesy of New Hampshire Fish & Game Department

Distribution: The mummichog is an estuarine fish that has the ability to tolerate a wide range of salinities. They can be found year-round in tidal creeks and saltwater marshes from Florida to Newfoundland.

General Description: The mummichog is a stocky fish with a blunt nose and rounded tail. Males and Females differ slightly in size and coloration. Females can get up to 5 inches long, while males reach approximately 4.5 inches. Males tend to be dull green in color with white and yellow spots and silvery bars on its side and a white to orange belly. During spawning season, they turn a darker greenish brown with bright blue spots. The females on the other hand are more pale in color, from olive to green, with a pale underside.

Life History: Mummichogs emerge from their 6 to 8 inches deep mud burrows in the spring as the water begins to warm. In spawning season, from April until the end of August, the male's coloration becomes more eye-catching. The female deposits her eggs in clutches of 10 to 300 in the marsh on the full or new moon high tide, when tides are at their highest. About two weeks later on the next full or new moon tide, the eggs hatch and the young return to tidal creeks and salt marshes. The mummichog is an omnivore and consumes a variety of plants and animals including polycheates, diatoms, amphipods, insect larvae, mollusks, crustaceans, small fishes, eggs, and sea grass fragments.

Kim Cole
Environmental Scientist
Delaware Coastal Programs

Green Eggs and Sand

For the past two years, the DNERR Education Coordinator has served on the steering committee for an educational project entitled "Green Eggs and Sand: The Tri-State Horseshoe Crab/ Shorebird Education Project."

Green Eggs and Sand is composed of 4 educational modules which systematically guide students through an understanding of the horseshoe crab, its connection to a larger ecosystem (though shorebirds), its use by man, and finally, human attempts to manage this resource, given limited science and multiple stakeholders. Each module consists of video segments and lesson plans, all correlated to National Standards in Math, Science, Social Studies, and Language Arts.

The project began in 2000 when a coalition of environmental educators from Delaware, Maryland and New Jersey met to develop a proposal for the video/print educational package that covered both the science and the management of this unique resource. A workshop for teachers from all three states was held that May to introduce them to the idea and to gather thoughts for program development. During the following year, volunteer teachers from that first workshop worked with the steering committee to develop lesson plans and the format of the education package for delivery to a new group of teachers in May of 2001.

With rave reviews from the workshop, the core teachers and committee began editing the project and filling in gaps where needed. The completed project will be presented at workshops in May and June of this year to over 100 teachers from Maryland, New Jersey, Delaware, Pennsylvania, Rhode Island, Massachusetts, and Virginia.

If you are interested in learning more about the project please visit www.berkanacenter.org or call Katy Dulin at (302) 739-3436, ext. 20.

Katy Dulin

summer's edge

the rising sun drags its feet across the muddy sky
with the rambling purpose of an old man
reeking of stale brew and lacking in sleep.
beneath its bloated body, the clouds give birth to
unforgiving raindrops that prick my skin like frozen needles
and hungry winds that gnaw into my belly like starving beasts.

shivering and wet, i scan the lonely cattails and empty flats,
where the winter sky sifts the bay for the remains of summers past,
and wonder when the murky waters stabbing cold into my feet
will invite me to dive head first into the hot, languid days of june
and the loud, liquid nights of july
when raindrops kiss like warm farewell tears
and the winds whisper like earnest lovers.

"soooooooon," sigh the waves lapping on the shore
where the night meets the spring and the world teeters
on the cusp of summer's edge.

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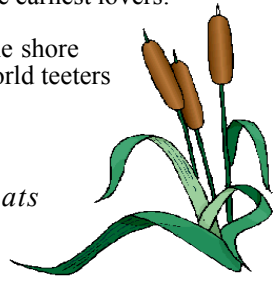

Tree Planting

Trees add beauty, help clean the air, and provide food and shelter for birds and other wildlife. In the past two weeks, we have planted 175 trees of 15 different varieties around the Reserve. All of our trees are native species. Native species will live longer, be more tolerant of local weather and soil conditions and be more beneficial to wildlife than non-native trees.

All but 32 of our trees were seedlings and were planted with a planting bar. A tree tube was placed around the seedling to protect it from the weather and from being eaten by our local deer and rabbit population. The remaining trees, . Flowering Dogwood,American Holly, and Bald Cypress, were much larger and planted with the aid of an auger. These can be seen as you come up our lane.

Wes Conley

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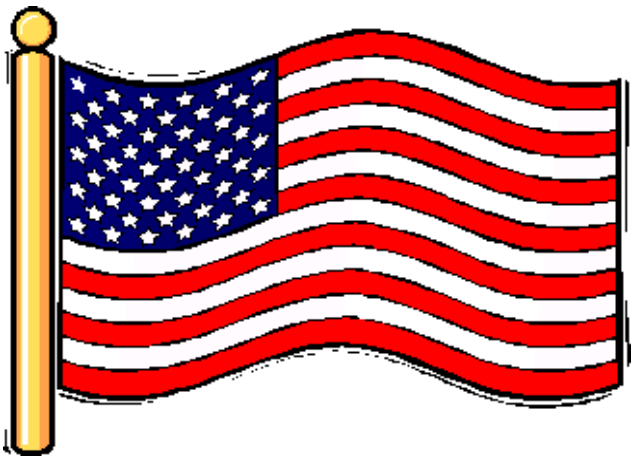
Reserve Manager called to Duty



Mark Del Vecchio, Reserve Manager, has been called to active duty. He is a member of the 153rd Military Police Company of the Delaware Army National Guard. Mark left on May 10th for Fort Leonardwood, Missouri to attend the Military Police Academy for 9 weeks. Upon his return in late July, after hopefully a couple days of leave, he will catch up with his unit at Fort Dix, New Jersey. By early August, Mark expects to deploy to Eskan Village, Saudi Arabia for approximately 6 to 7 months. His company will be providing force protection for military and American Civilian housing and security for Prince Sultan Air Force Base. In Mark's absence, Katy Dulin will be Acting Reserve Manager. Please keep Mark and his family in your thoughts. We thank him for his service for our country and wish him well.

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